

2019: A Skull Base Odyssey

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Registrar: Division of Radiodiagnosis

Tygerberg Hospital & Stellenbosch University



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100
1918-2018

- 58 year female referred by ENT
 - 9 month history
 - Vertigo
 - Pulsatile tinnitus
 - Hearing loss

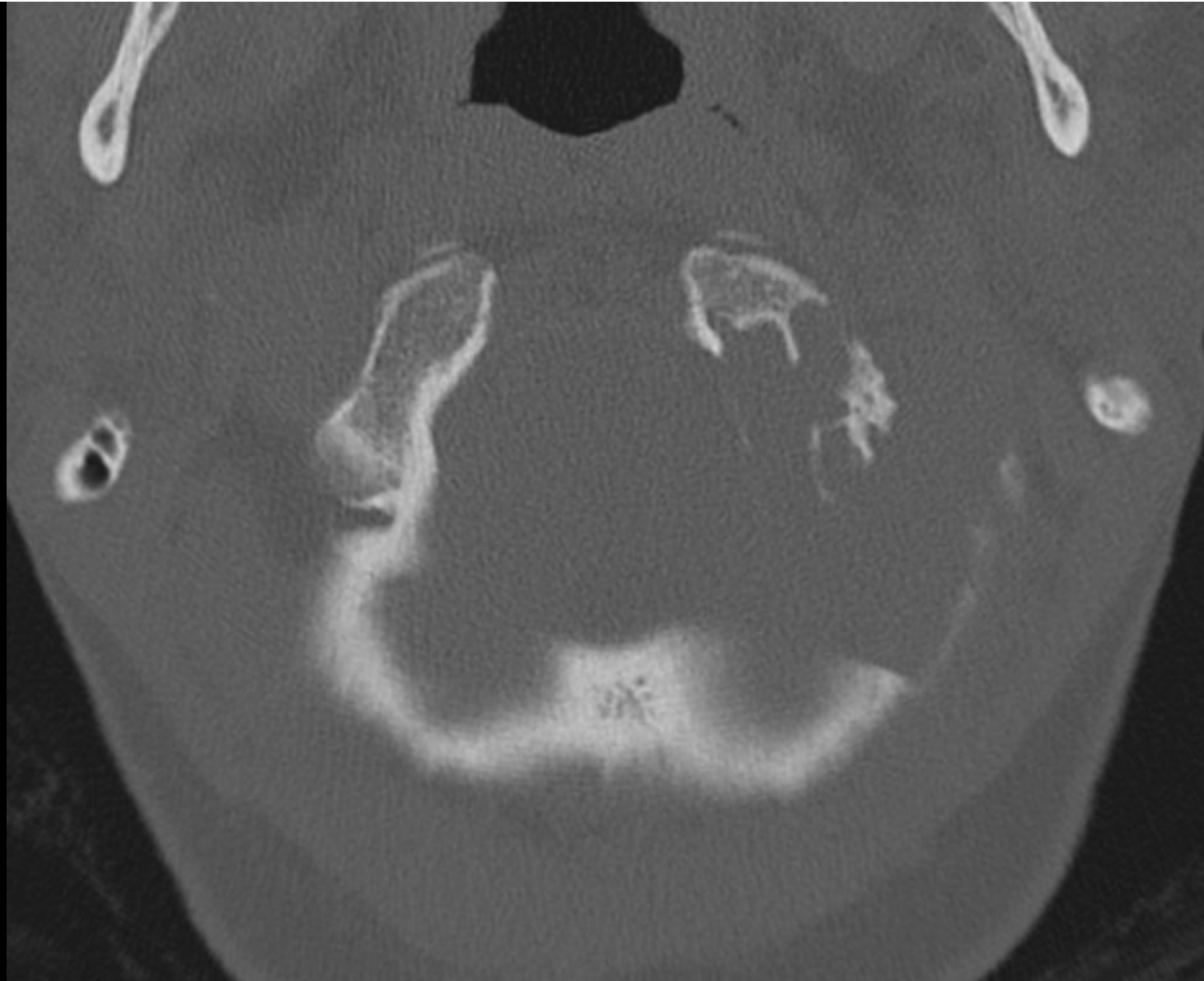
- 58 year female referred by ENT
 - 9 month history
 - Vertigo
 - Dix-Hallpike negative
 - Cerebellar tests negative
 - Left vestibular hypofunction
 - Pulsatile tinnitus
 - Hearing loss
 - Air bone gap (conductive)
 - No hypernormal bone conduction

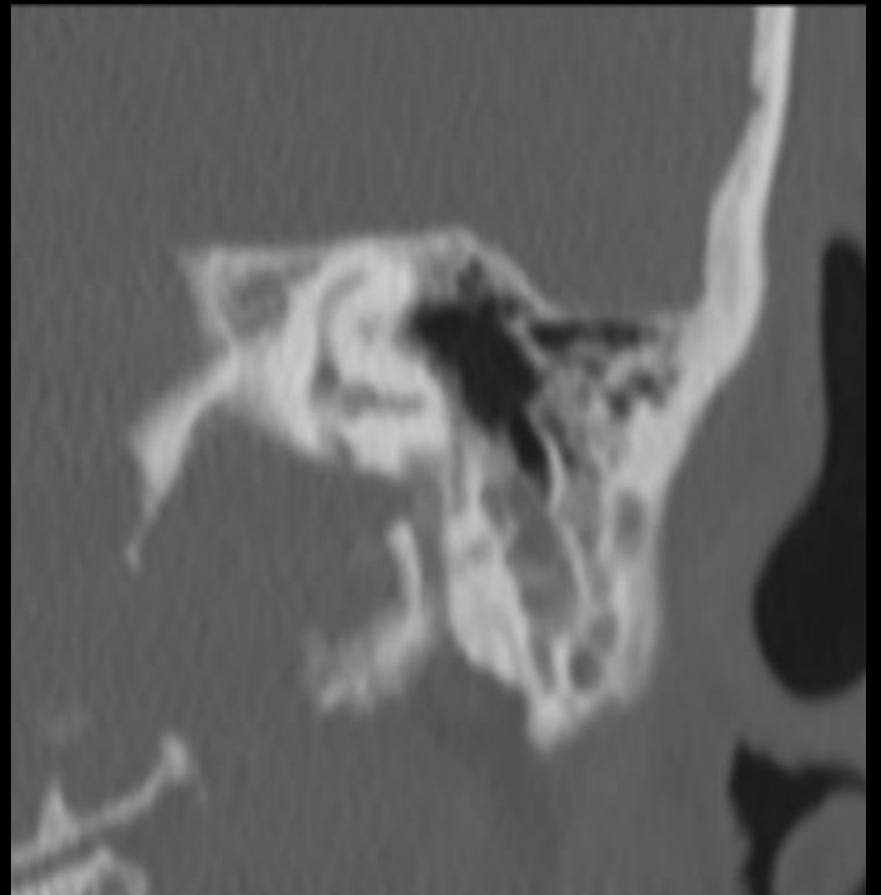
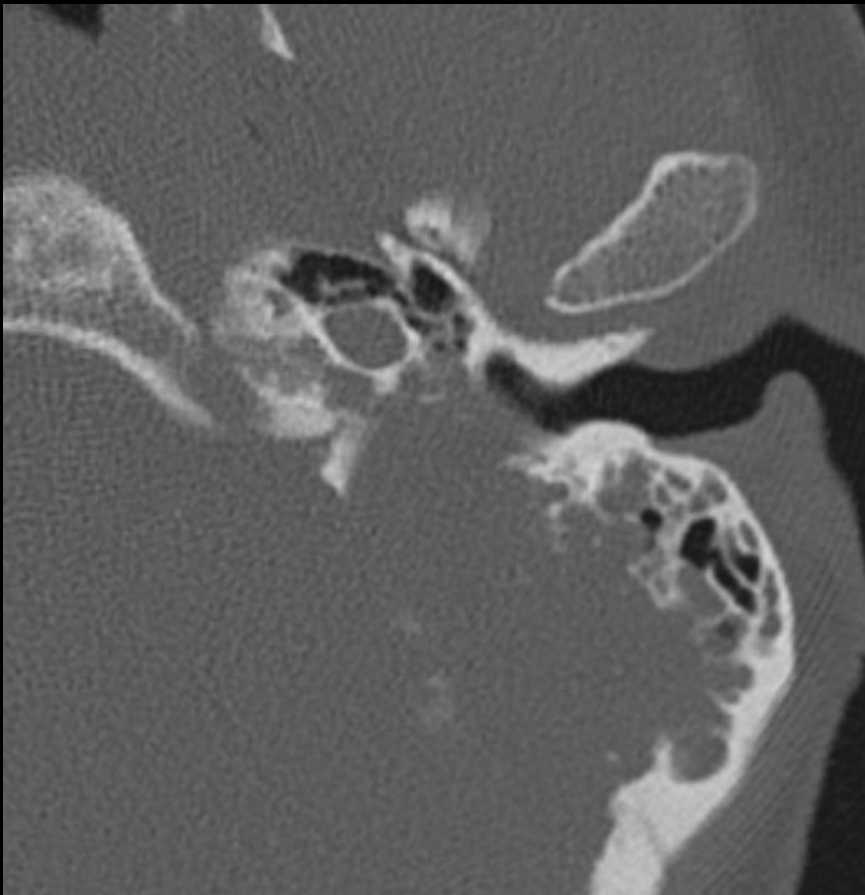
- CT (May 2018)
 - Large glomus jugulare-tympanicum paraganglioma

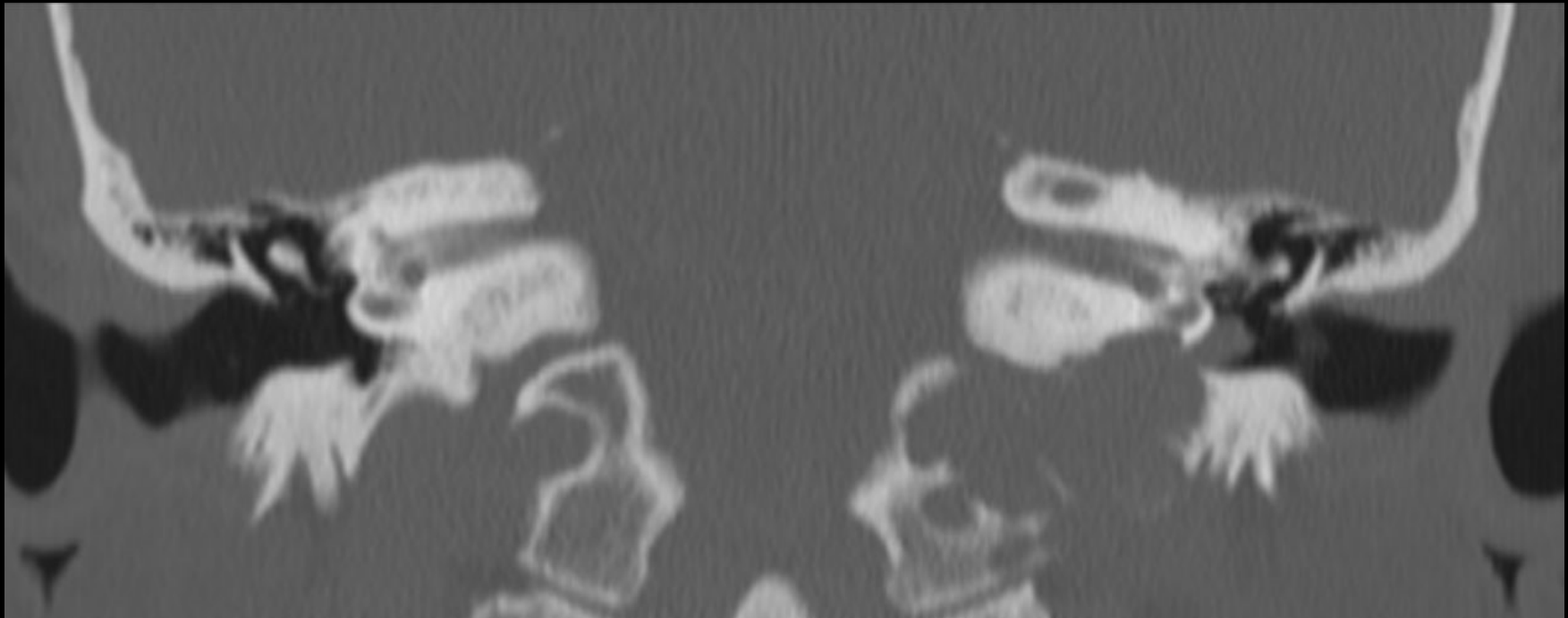


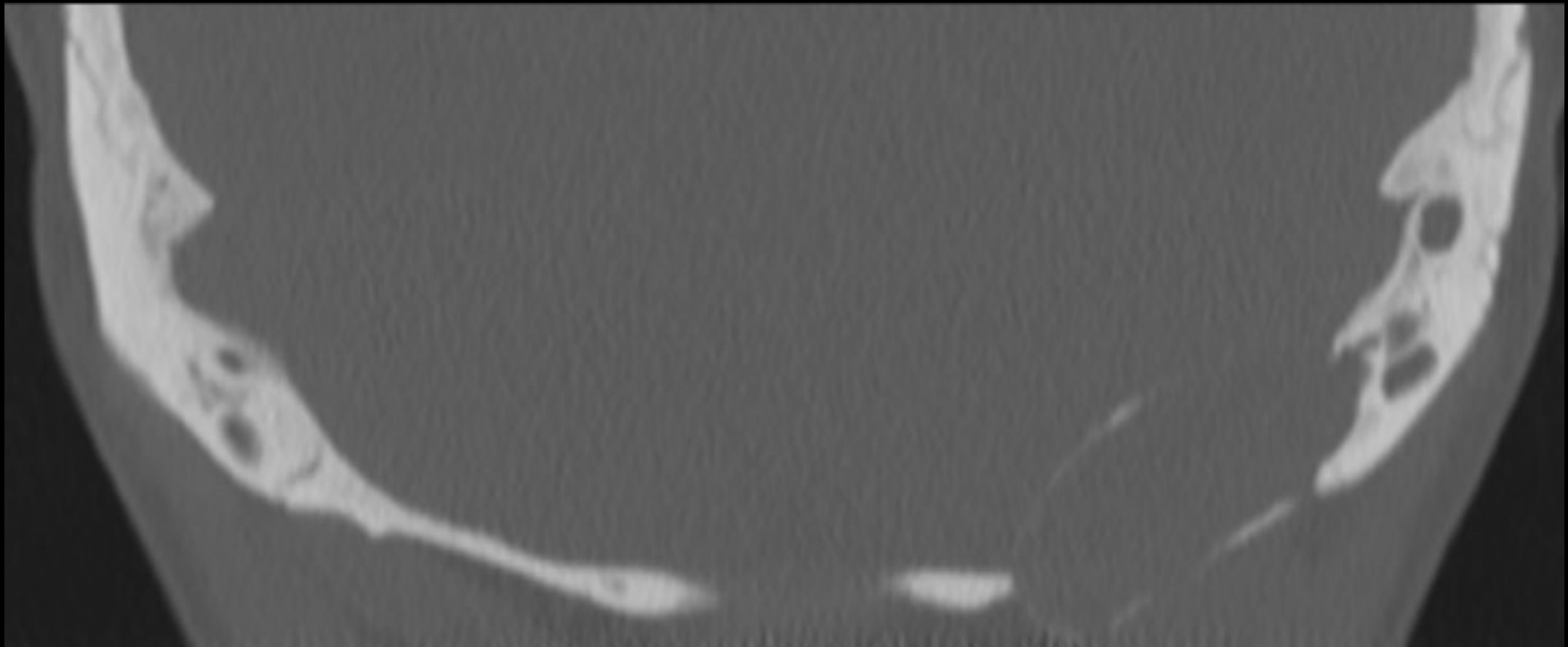


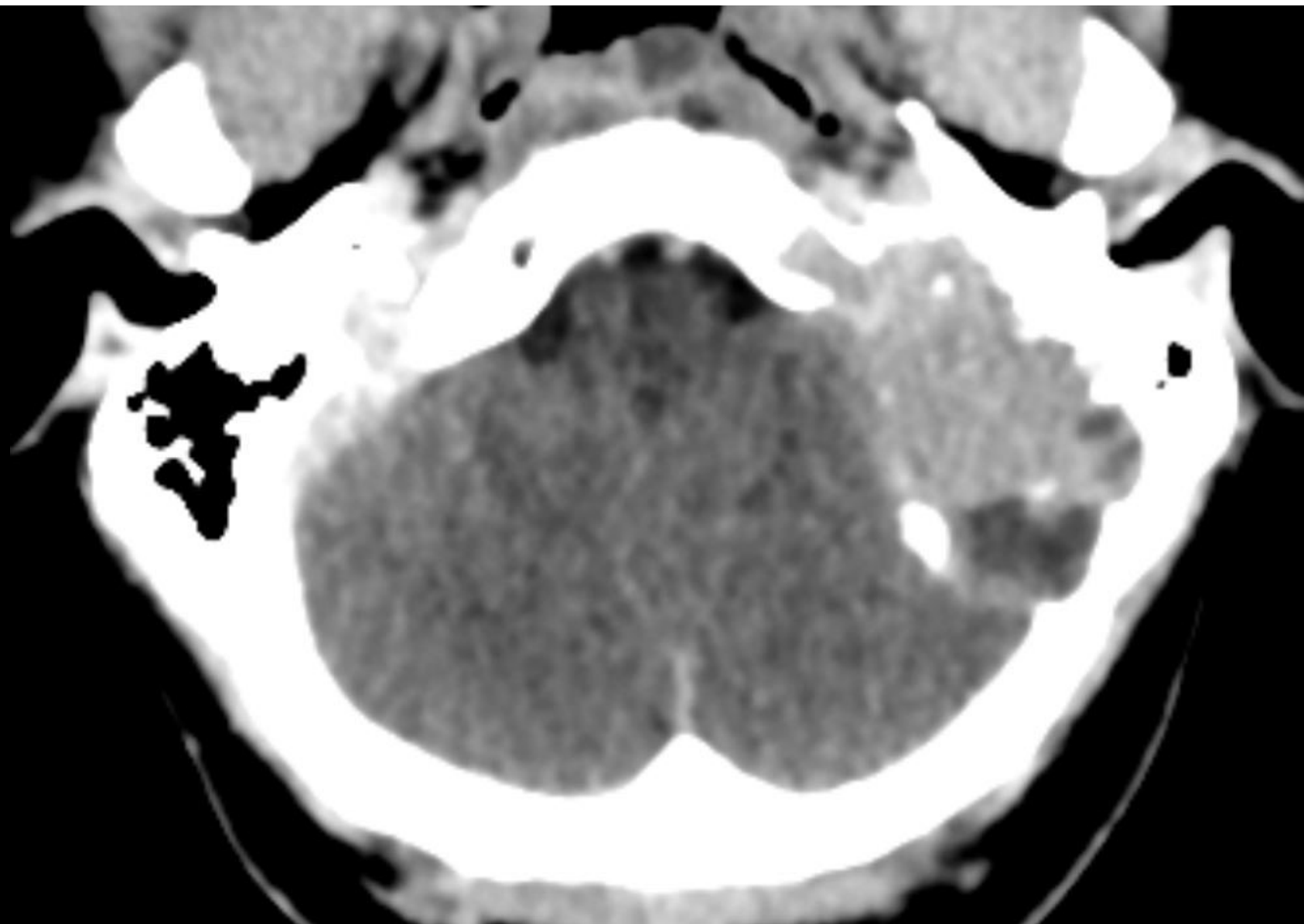


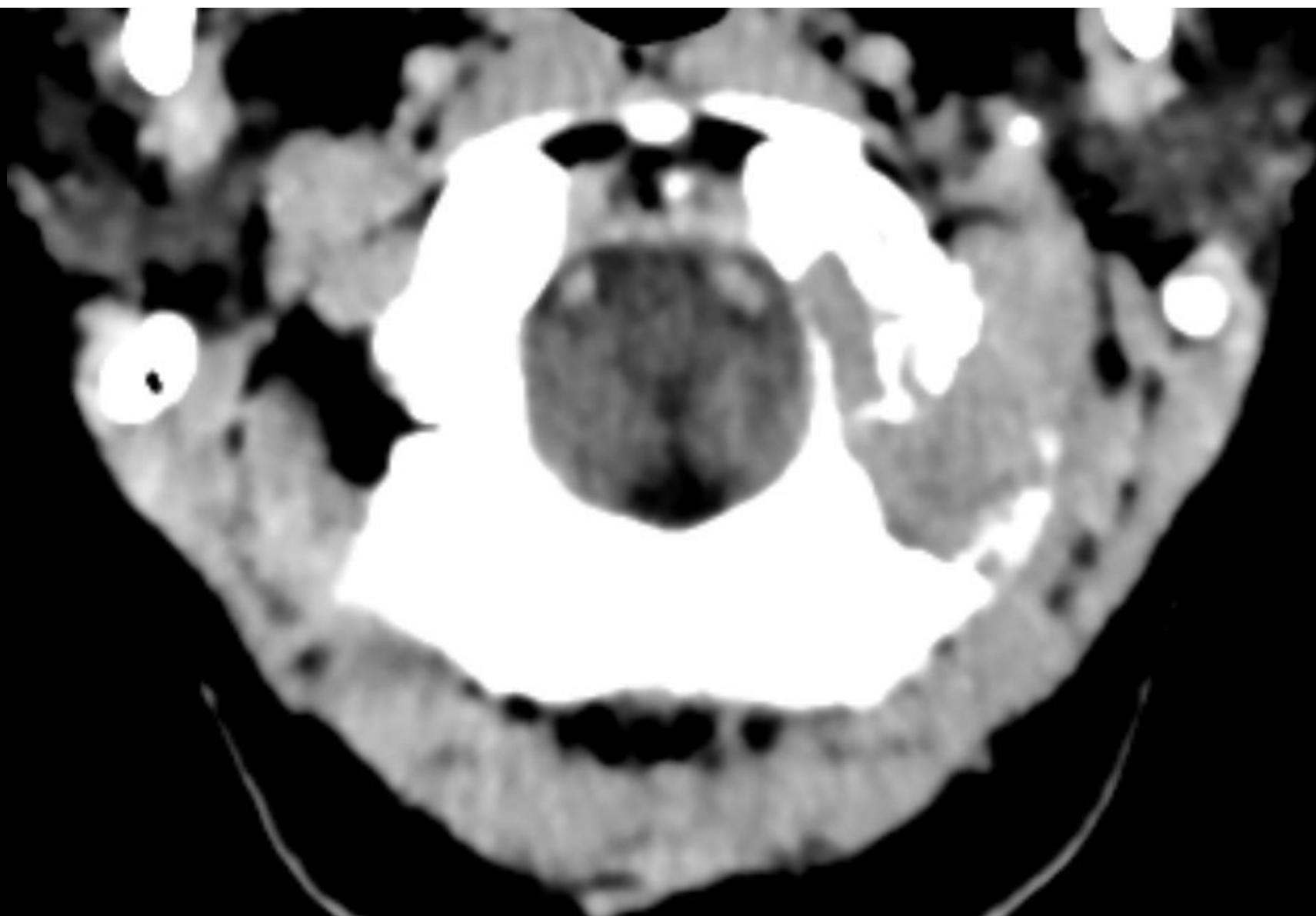












- Ddx
 - Destructive petrous ridge mass
 - Metastasis
 - Primary bone tumour
 - Benign
 - GCT
 - ABC
 - Malignant
 - Chondrosarcoma
 - Plasmacytoma
 - Meningioma
 - Vascular anomaly
 - Jugular foramen mass
 - Endolymphatic sac tumour

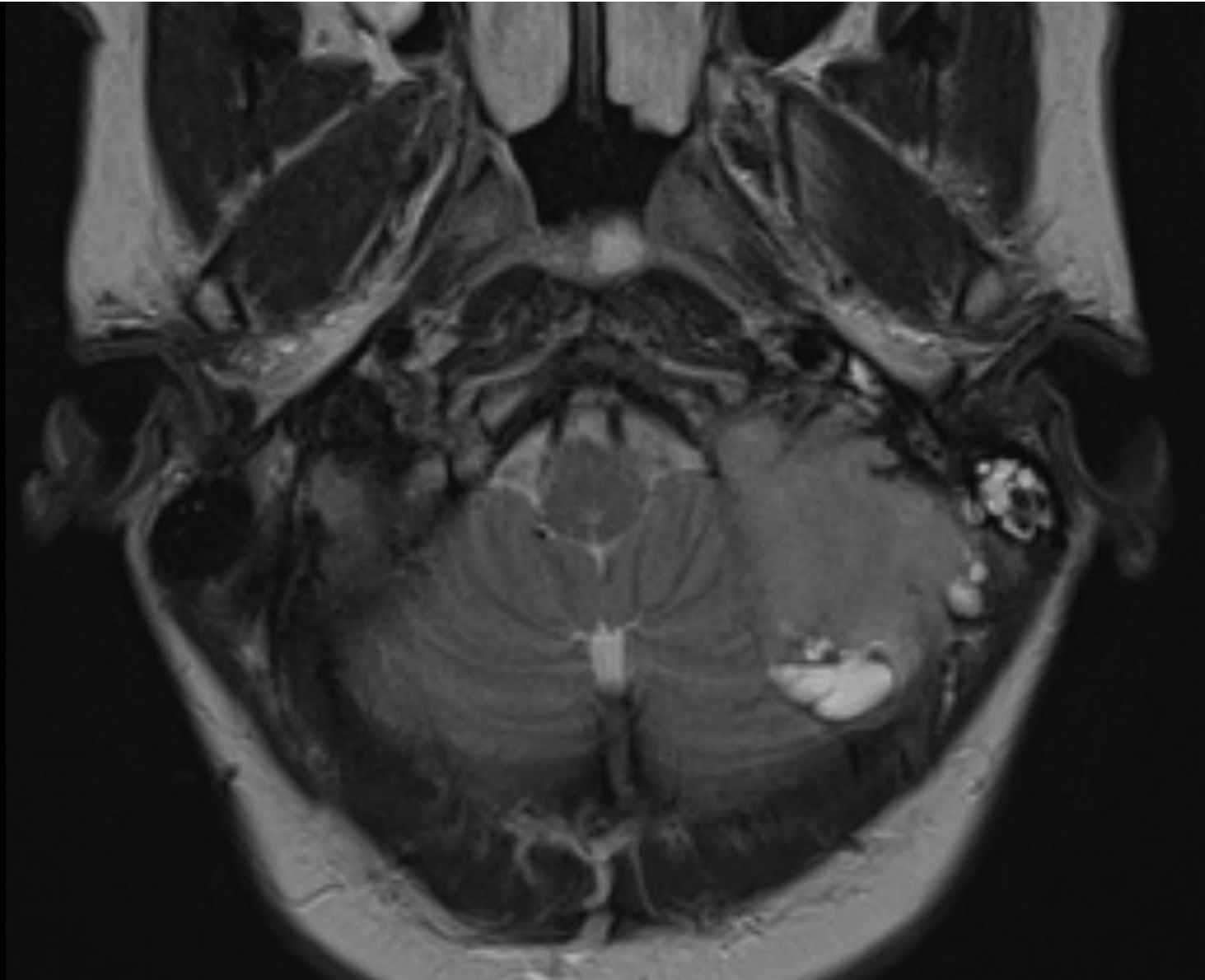
- CT

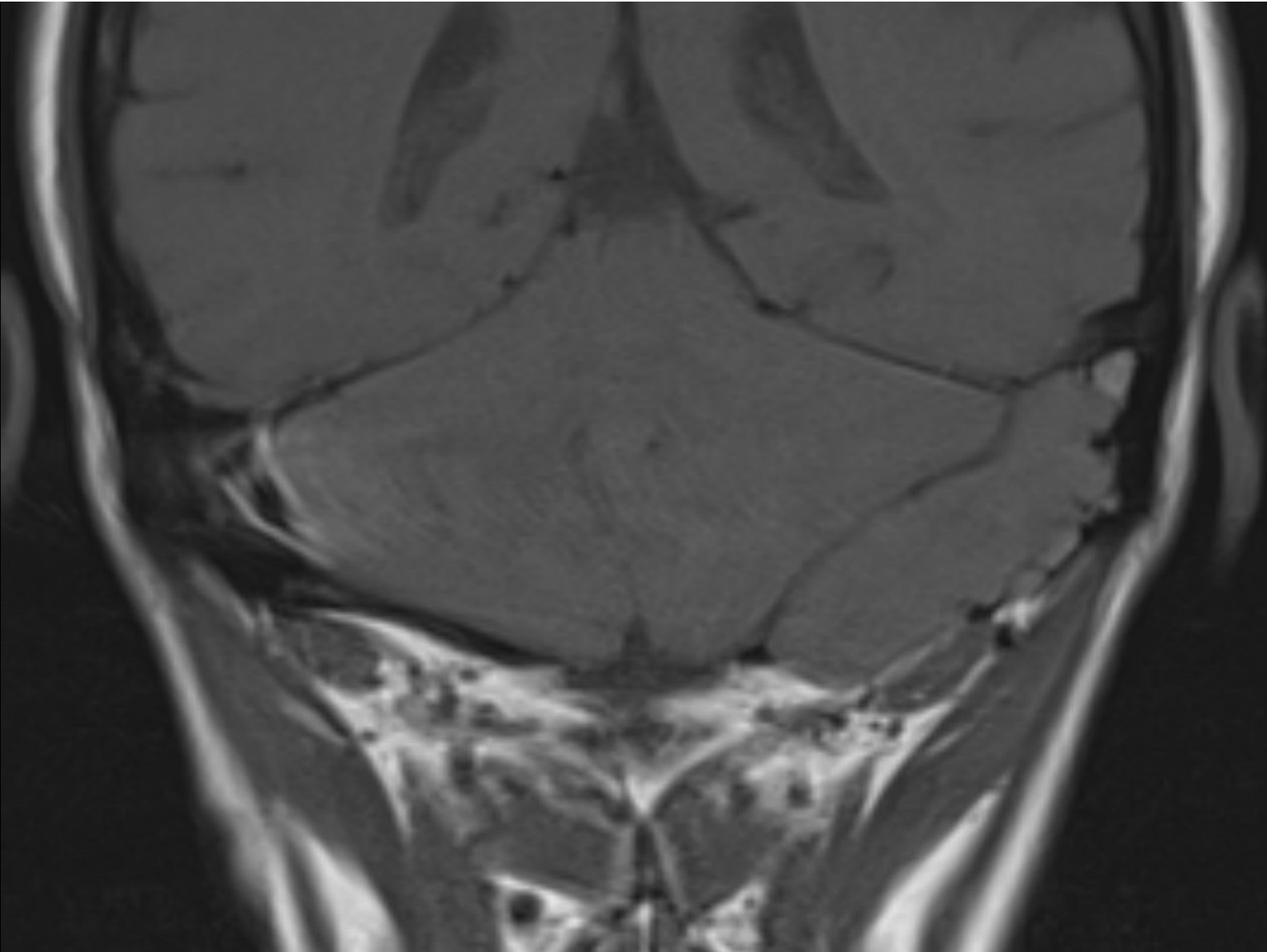
- May 2018

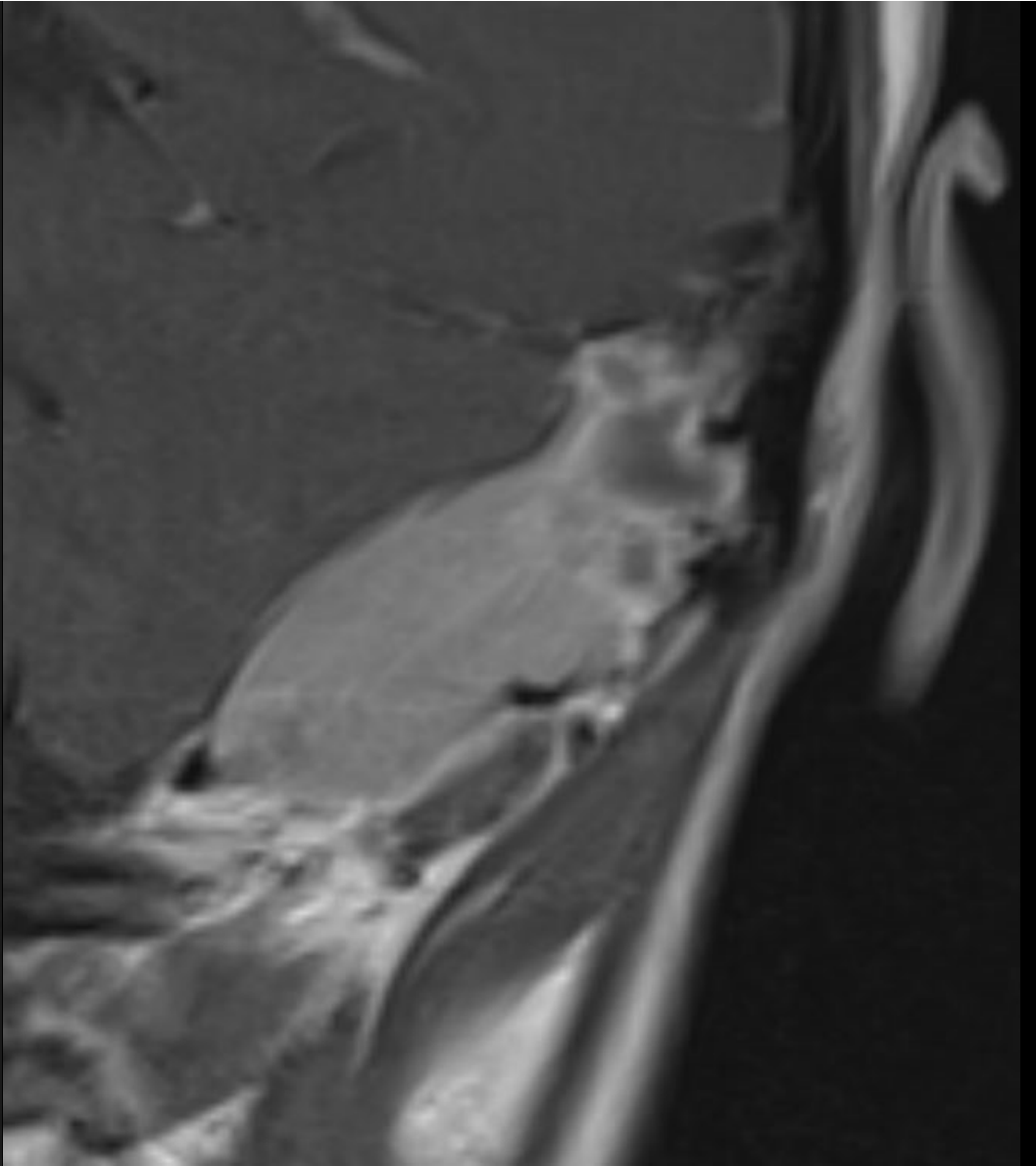
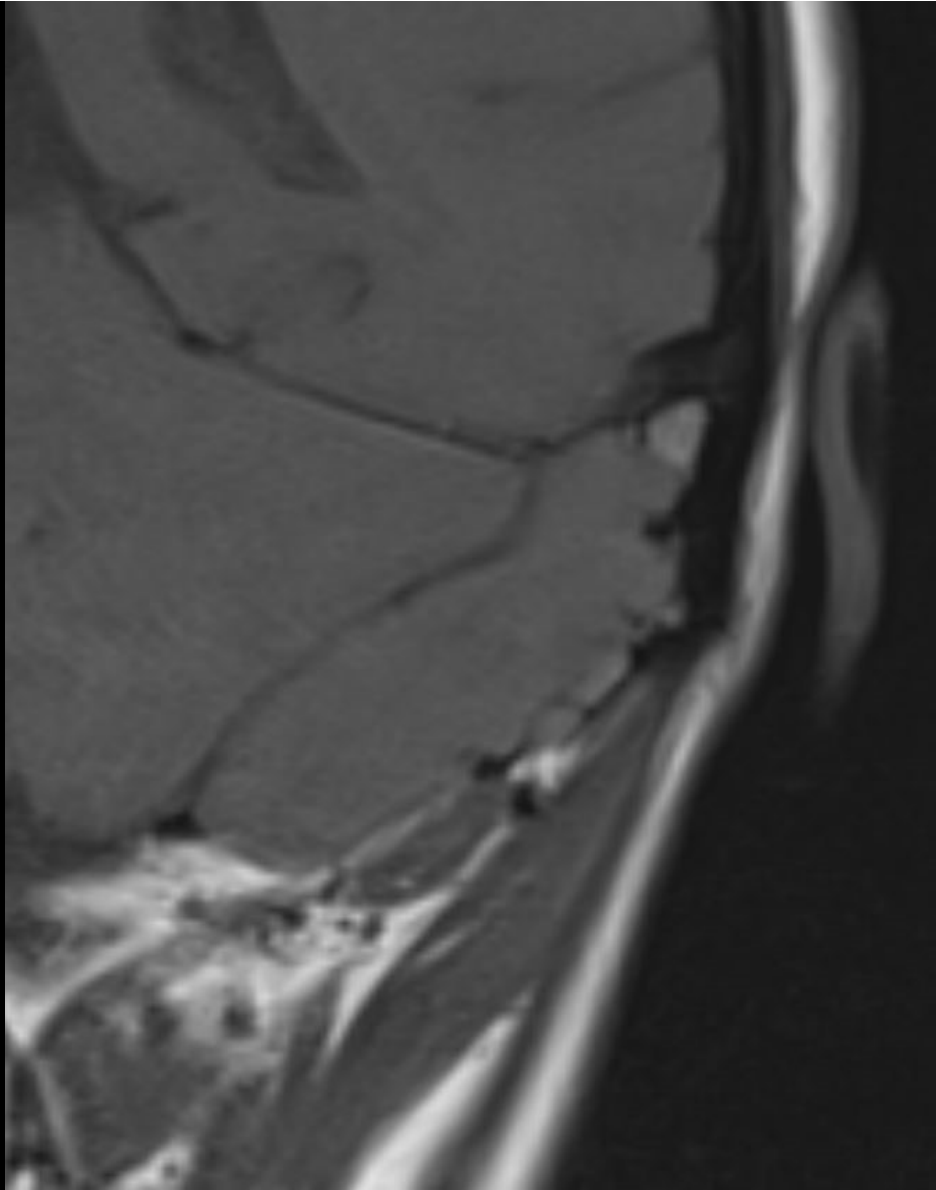
- Large glomus jugulare-tympanicum paraganglioma?

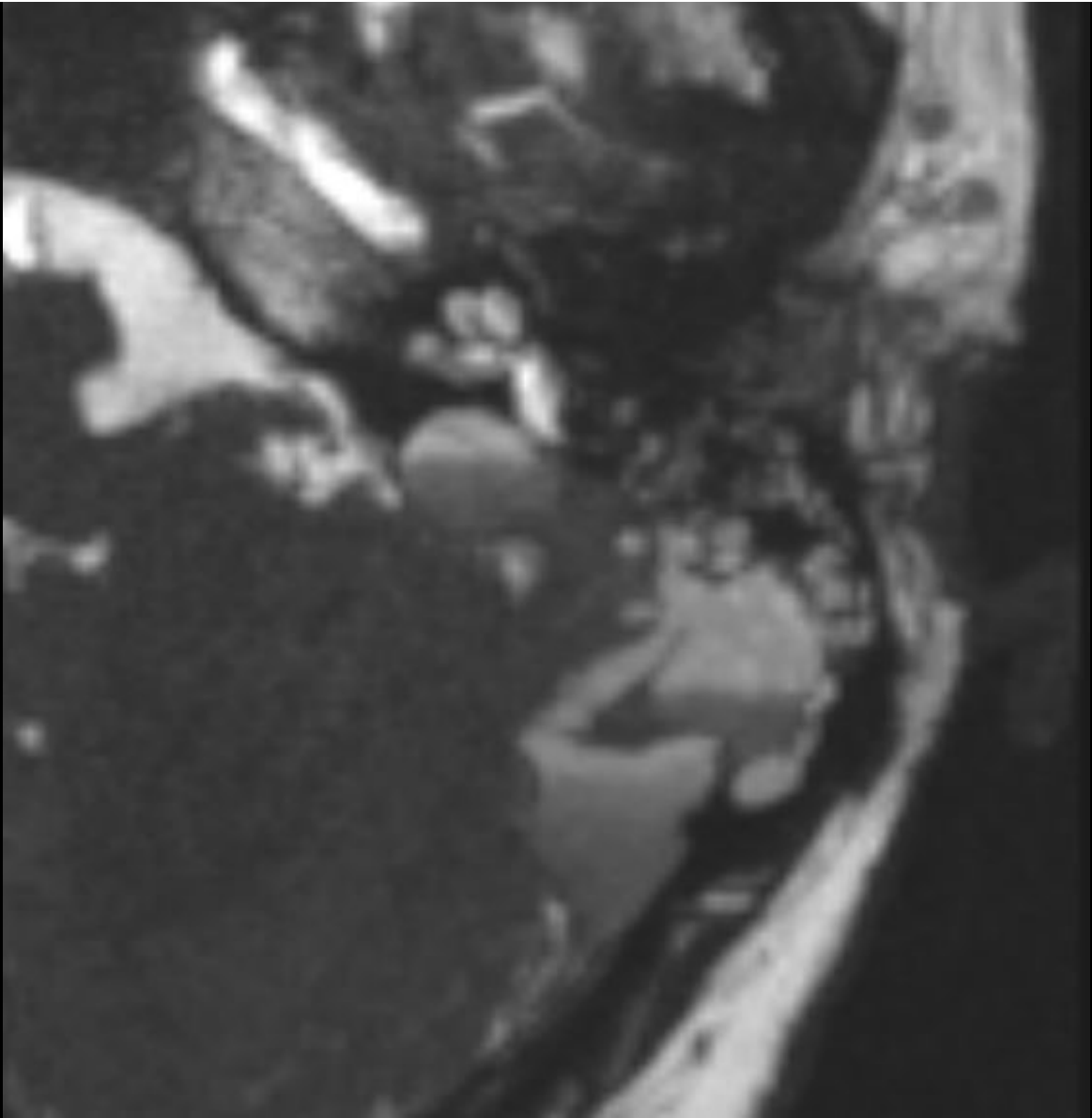
- MRI

- June 2018







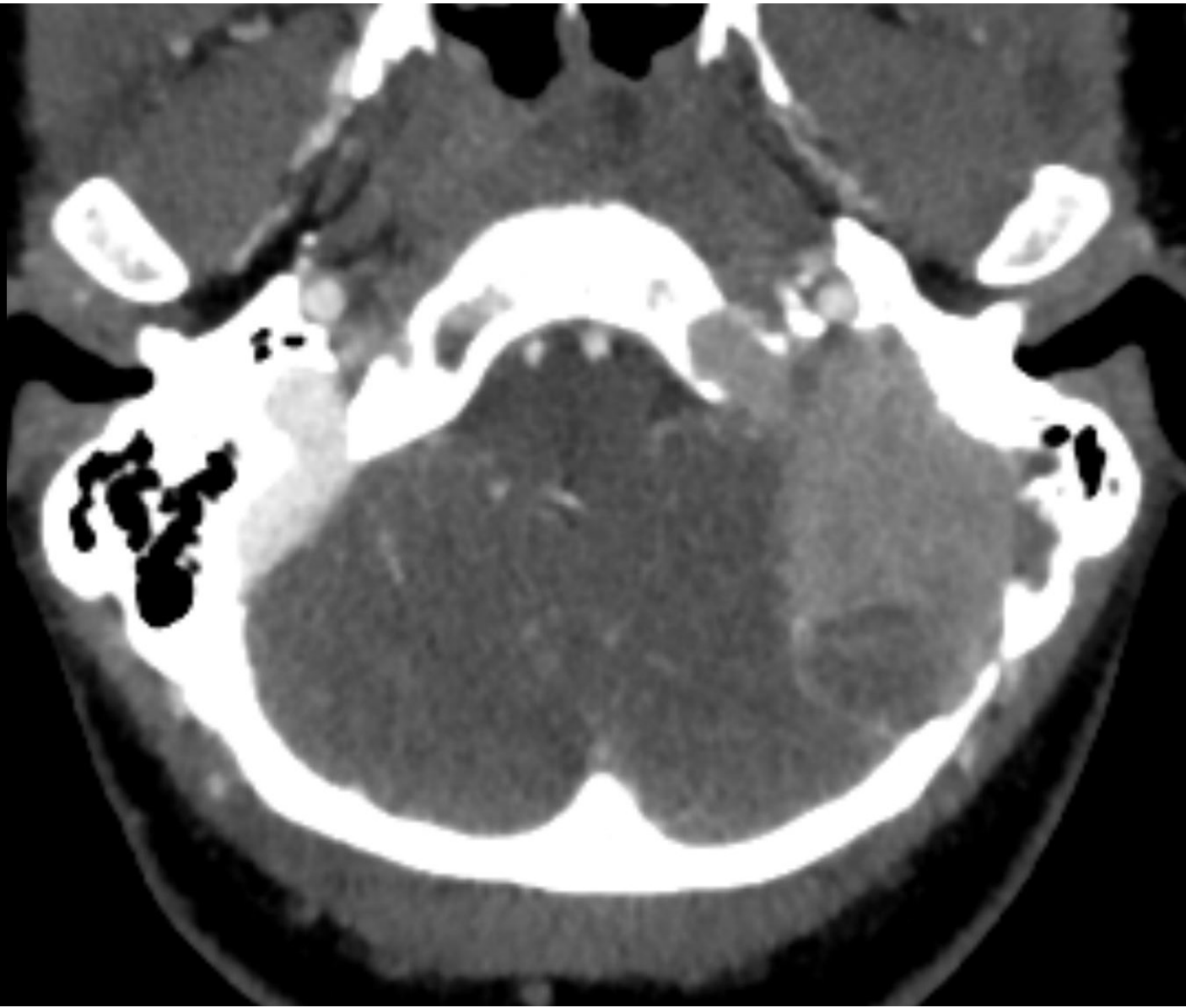


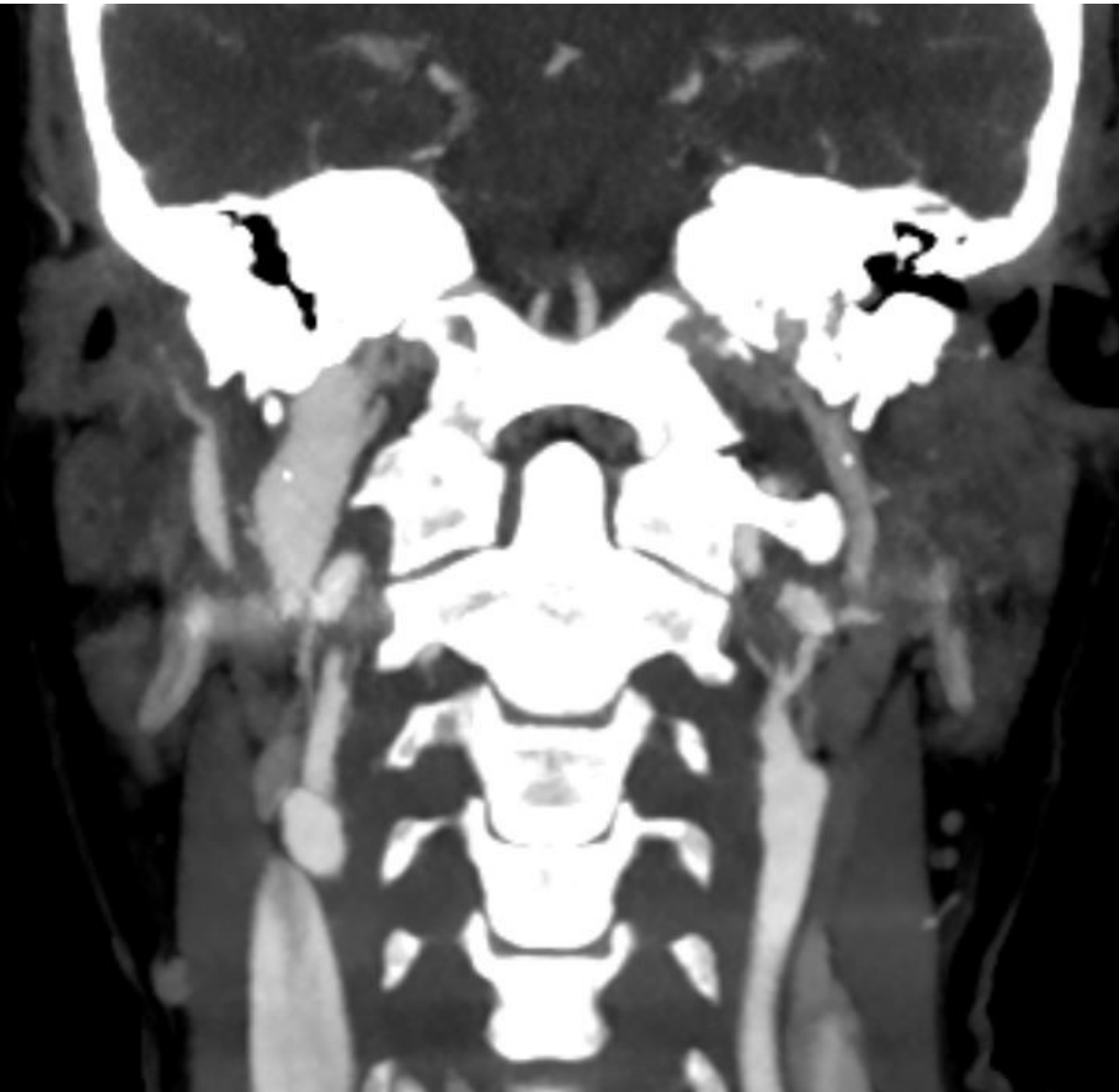
- Ddx
 - Destructive petrous ridge mass + fluid-fluid levels
 - Metastasis
 - Primary bone tumour
 - Benign
 - ABC
 - Malignant
 - Chondrosarcoma
 - Plasmacytoma
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 - Vascular anomaly
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 - Endolymphatic sac tumour

- Ddx
 - Destructive skull base mass + fluid-fluid levels
 - Secondary ABC
 - ABC mimic

- Ddx
 - Destructive skull base mass + fluid-fluid levels
 - Secondary ABC
 - Fibrous dysplasia
 - Giant cell tumour
 - Chondroblastoma
 - Non-ossifying fibroma
 - Osteosarcoma
 - ABC mimic
 - Telangiectatic osteosarcoma

- CT
 - May 2018
- MRI
 - June 2018
- CTA
 - July 2018



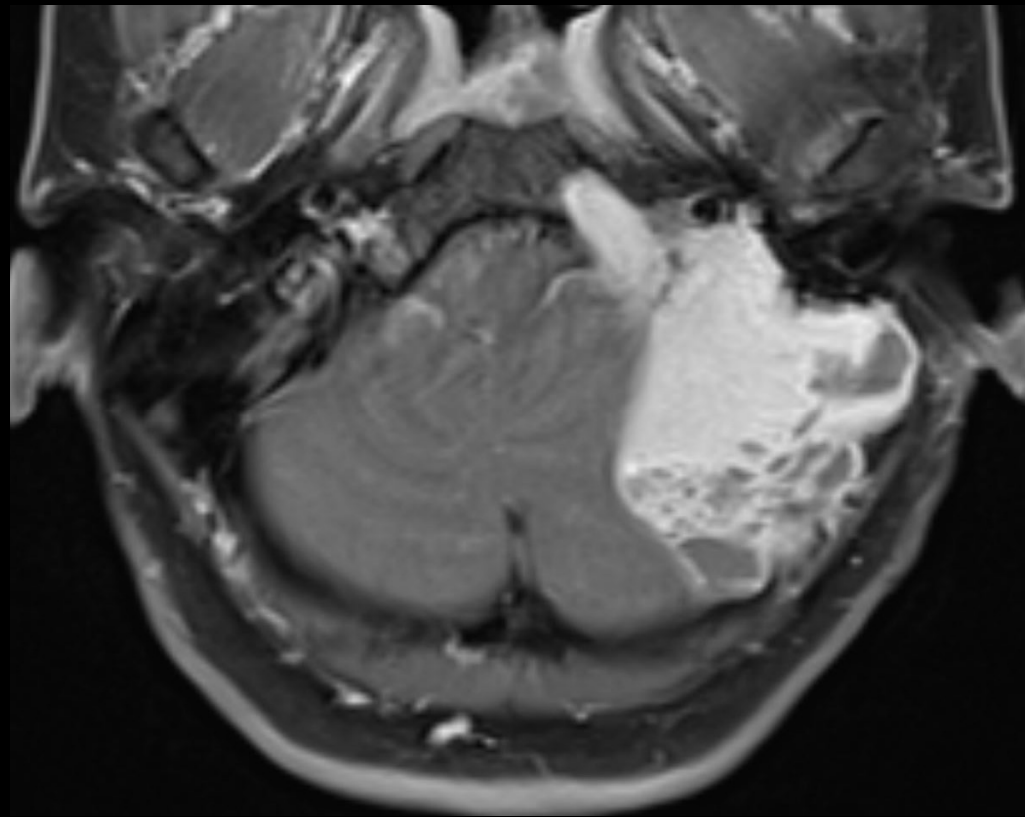
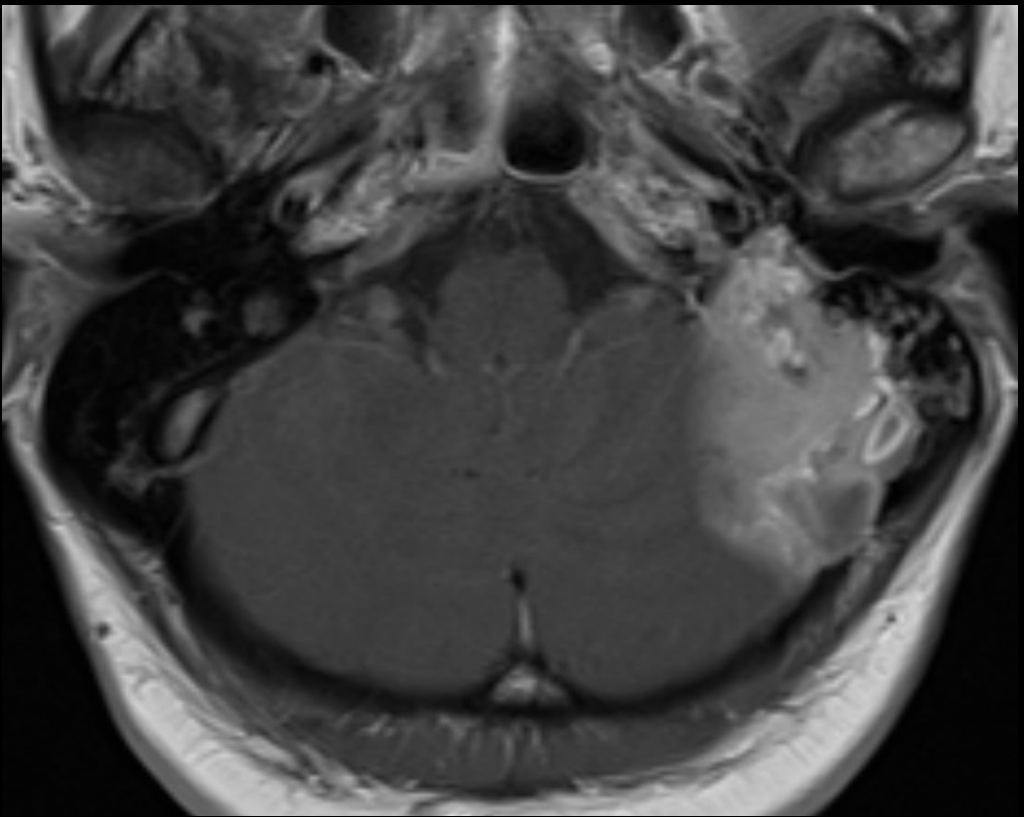


- CT
 - May 2018
- MRI
 - June 2018
- CTA
 - July 2018
- US-guided FNA / trucut
 - Technical failure. Unable to identify mass.

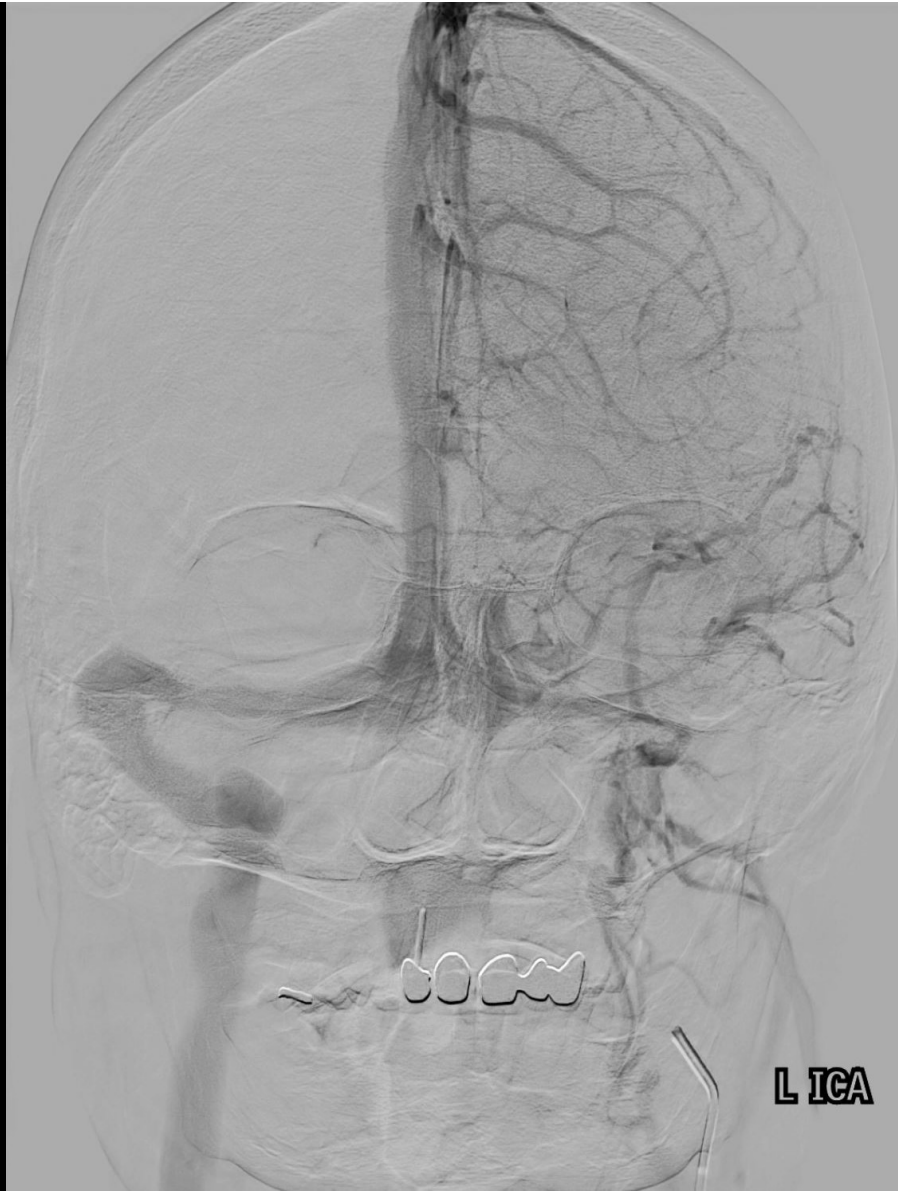
- CT
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 - Technical failure. Unable to identify mass.
- Cortical mastoidectomy & surgical biopsy

- CT
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 - June 2018
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 - Technical failure. Unable to identify mass.
- Cortical mastoidectomy & biopsy
 - [dx withheld]

- CT
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 - July 2018
- US-guided FNA / trucut
 - Technical failure. Unable to identify mass.
- Surgical biopsy
 - [dx withheld]
- MRI
 - March 2019
 - Resectable?

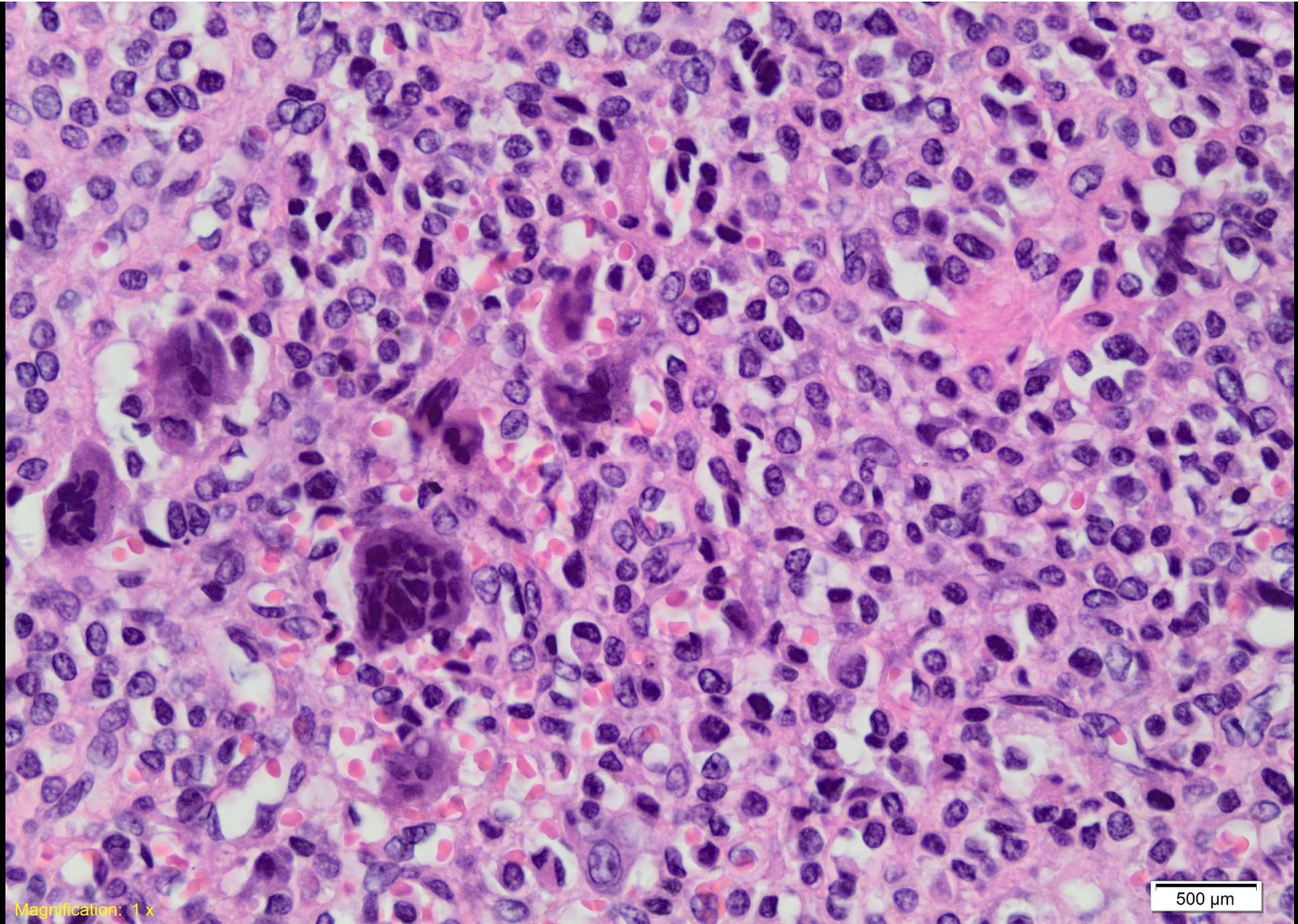


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 - July 2018
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 - [dx withheld]
- MRI
 - March 2019
 - Resectable?
- DSA ± embolization
 - April 2019



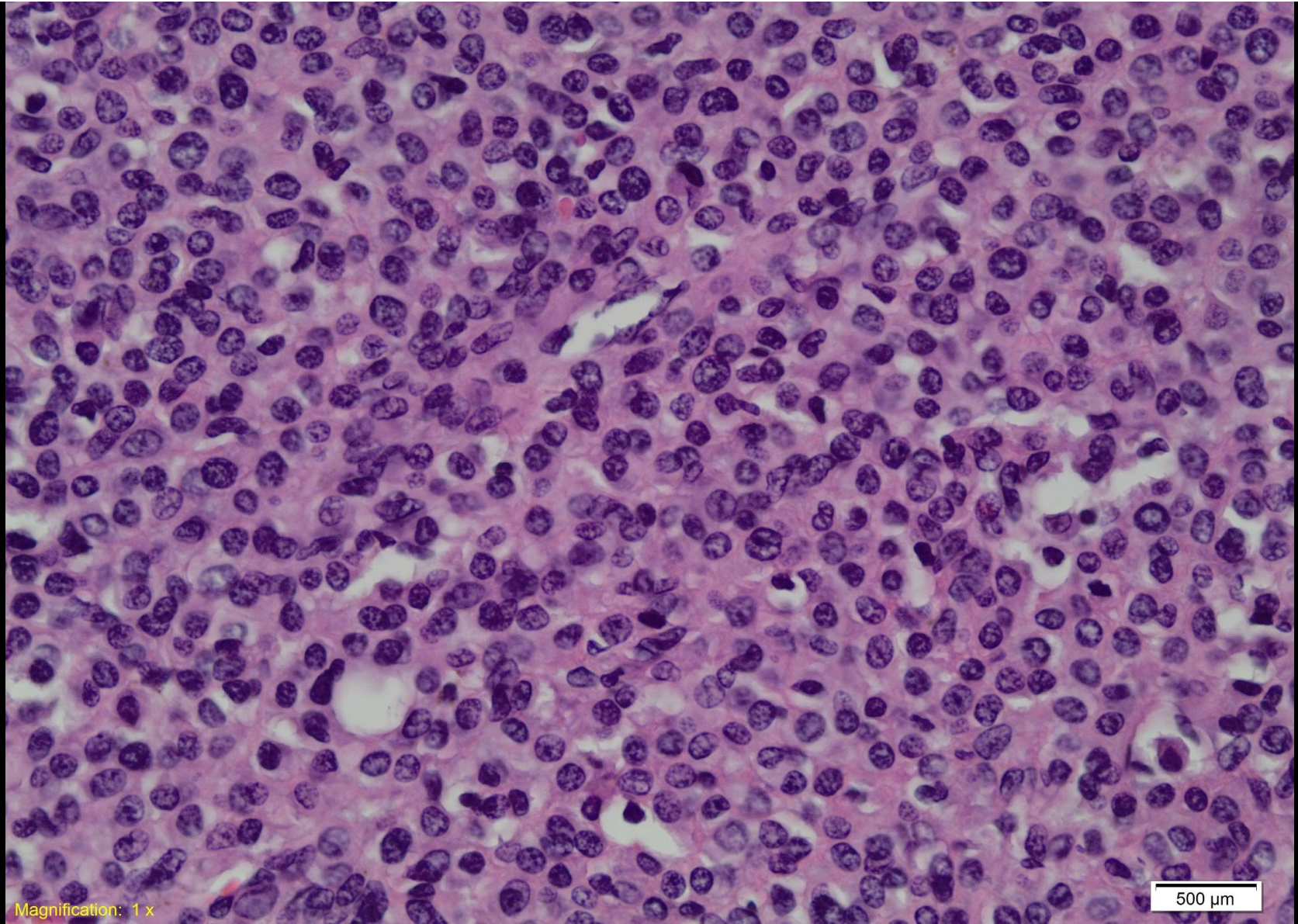
- CT
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- Cortical mastoidectomy & biopsy
 - [dx withheld]
- MRI
 - March 2019
 - Resectable?
- DSA ± embolization
 - April 2019
- Tumour resection & petrosectomy
 - April 2019

- Histopathology



Magnification: 1 x

500 μm



Magnification: 1 x

500 μm

- Histopathology

- Diagnosis

Chondroblastoma
Secondary aneurysmal bone cyst

- Chondroblastoma
 - Generally benign
 - WHO 2013 bone tumours: “intermediate, rarely metastasising”
 - Any bone with endochondral ossification
 - Long bones > flat bones > hands, feet > craniofacial skeleton
 - Age
 - 2nd/3rd decade [2 to 83 years]
 - Location much more variable in older patients
 - Mean age 44 years for craniofacial skeleton

- Chondroblastoma

- Ddx

- Benign

- GCT
 - Osteblastoma
 - Enchondroma
 - CMF
 - ABC

- Malignant

- Chondrosarcoma
 - Osteosarcoma

- Chondroblastoma of temporal bone
 - Radiographic appearance
 - Eccentric radiolucency
 - Sharply demarcated sclerotic margins
 - Areas of calcification (1/3)

- Chondroblastoma

- Ddx

- Chondroblastoma

- Epiphyseal, may extend to metaphysis
 - 2nd/3rd decade
 - 2nd ABC possible

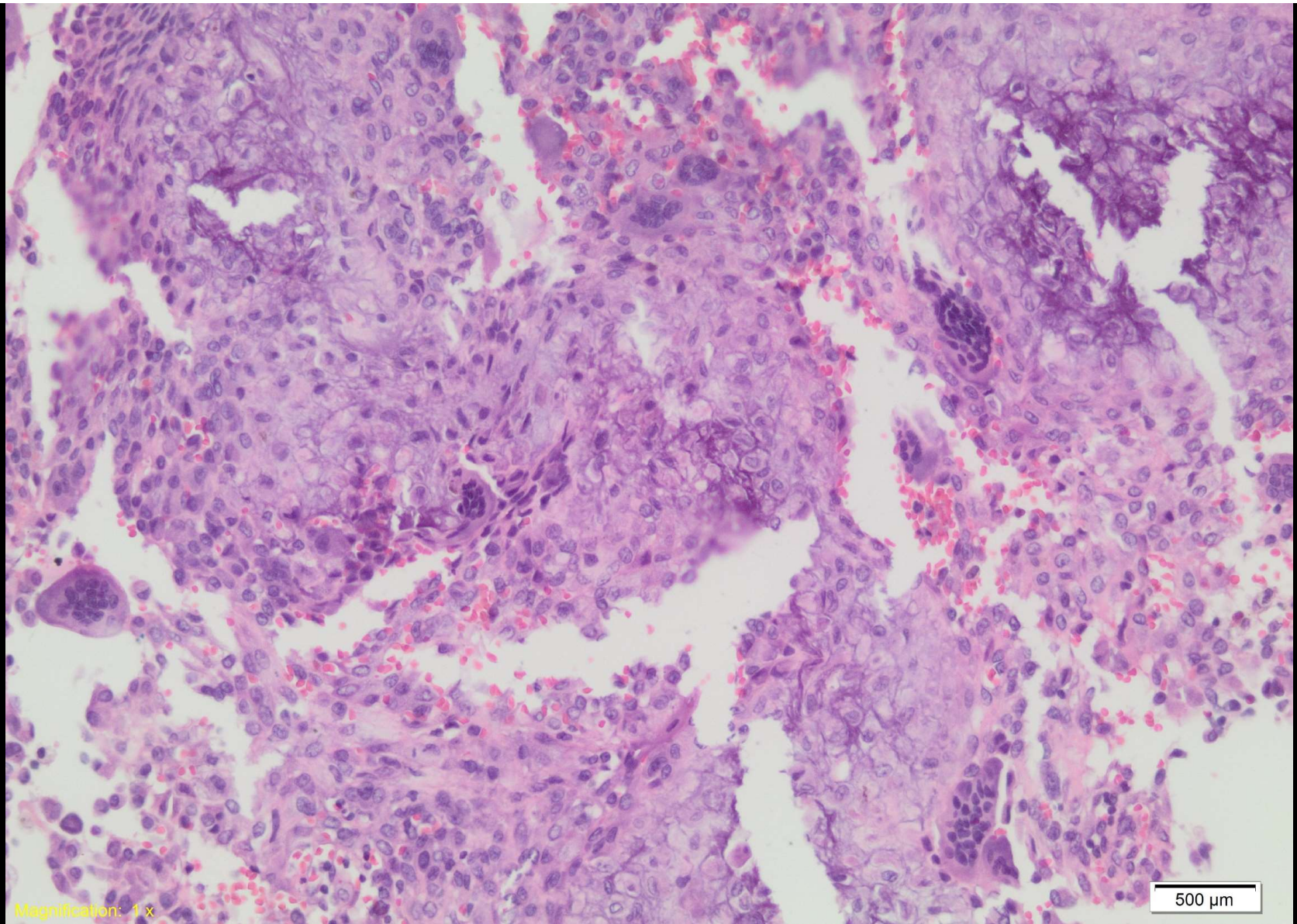
- Giant cell tumour

- Usually metaphyseal
 - 20 to 40 years
 - Peripheral eggshell calcification
 - 2nd ABC possible

- Clear cell chondrosarcoma

- Epiphyseal
 - Similar to chondroblastoma
 - 2nd ABC possible

Thank you!



Magnification: 1 x

500 μ m